

Appln. Serial No. 09/944,969
Amendment Dated December 7, 2007
Reply to Office Action Mailed September 7, 2007

REMARKS

In the Office Action dated September 7, 2007, claims 1-21 were rejected under 35 U.S.C. § 103(a) as unpatentable over Chaturvedi et al. ("Synthetic Economies: The Application of Distributed Interactive Computing Environments for Policy and Management Decision Making," Institute for Defense Analyses (Chaturvedi/IDA) in view of Chaturvedi et al., "Simulations in Economics and Management," Communications of the ACM (Chaturvedi/ACM), U.S. Patent No. 6,405,173 (Honarvar), P.R. Sugges, "The Use of Computerized Business Games to Simulate Business Behavior Under Different Policies," IEEE 1979 Winter Simulation Conference(Sugges), and U. Fischbacher, "z-Tree – Zurich Toolbox for Readymade Economic Experiments – Experimenter's Manual," Institute for Empirical Research in Economics (Fischbacher).

The independent claims have been amended to improve their form.

The § 103 rejection is purportedly over Chaturvedi/IDA, Chaturvedi/ACN, Honarvar, Sugges, and Fischbacher. However, the obviousness rejection of the claims actually also referred also to Chen & Wu, "Computer Games and Economics Experiments, HP Labs, November 2002, and Jepsen, "Perspective: How Programming Languages Evolve," November/December 1999. Note that Chen & Wu does not constitute prior art against the claimed invention, since its publication date of 2002 is after the invention date of the present application.

Effectively, the Office Action is basing the obviousness rejection on seven different pieces of references. It is respectfully submitted that a *prima facie* case of obviousness has not been established with respect to claim 1.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as a recent U.S. Supreme Court held, it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

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Here, a comparison of the teachings of the references, even if hypothetically combined, will reveal that the references disclose subject matter that is significantly different from the subject matter of claim 1.

The primary references relied upon by the Office Action include Chaturvedi/IDA and Chaturvedi/ACM, which refer to Synthetic Economy for Analysis and Simulation (SEAS). As noted by Chaturvedi/ACM, "SEAS replicates the real world in most crucial dimensions, ..." Chaturvedi/ACM, page 60. Chaturvedi/ACM states that "SEAS is a distributed, interactive, real-time environment for conducting large-scale experiments and simulations in areas where interactions among agents need to be studied." *Id.* The passage of Chaturvedi/IDA referred to by the Office Action is Appendix A, which refers to a base synthetic economy developed at Purdue University that contains three sectors: industry producers, firms, and households.

As correctly noted by the Office Action, Chaturvedi/ACM and Chatuvedi/IDA do not disclose translating player definitions that define a plurality of players and an associated set of rules defining a possible decision space, a decision-making process tree, an information set, an outcome function, and a payoff function for each player, into at least one codified script that is executed. It is apparent that SEAS as defined by Chaturvedi/ACM and Chaturvedi/IDA uses a **predefined program** (not scripts translated from player definitions) that is able to accept different inputs for performing the described simulations.

However, a predefined program also appears to be exactly what the secondary references relied upon by the Office Action teach. The Office Action relied upon Sugges as disclosing "computerized business games used as a research tool to determine how businesses respond to corporate and government policies in the context of economies," and refers to Fischbacher as disclosing "use of a scripting language in a customizable, interactive computerized business game." 9/7/2007 Office Action at 10. The assertion that Fischbacher teaches use of a scripting language in a customizable, interactive computerized business game is **incorrect**. Fischbacher describes a z-Tree program that is designed to enable conducting of economic experiments. Fischbacher, page 5. The z-Tree program includes a server program (z-Tree) and client programs (z-Leaf). The z-Tree server program and the z-Leaf client program of Fischbacher are clearly predefined programs, not scripts that can be translated from player definitions into at least one codified script, as recited in claim 1.

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Similarly, with respect to Sugges, there is absolutely no indication that its computerized business games include codified scripts translated from player definitions. Honarvar, the other reference cited by the Office Action, refers to a decision management system that simulates the effect of a strategy by applying the strategy to a client data, and tracks what type of client traveled through a respective decision point in the strategy during the simulation. Honarvar, Abstract. However, there is no indication that the decision management system of Honarvar is translated from player definitions into a script.

References cited by the Office Action that refer to "script" are Jepsen and Chen & Wu (Chen & Wu is a 2002 article of which the present inventor is a co-author). However, Jepsen describes programming languages in general. Page 71 of Jepsen refers to scripting languages. However, nowhere in Jepsen is there any hint that the scripting language described in Jepsen can be translated from player definitions that define a plurality of players and associated set of rules defining a possible decision space, a decision-making process tree, an information set, an outcome function, and a payoff function for each player.

The Office Action also pointed to Chen & Wu, an article dated in 2002, of which the present inventor is a co-author. Specifically, the Office Action cited to a passage on page 3, fourth paragraph (left) of Chen & Wu. The Office Action partially quotes a portion of this passage: "the idea of script languages for particular games is not new ... script languages can also be found in commercial computer games to allow customization of computer behavior ..." However, the Office Action omitted an important part of the cited passage which states:

While the key innovation of the MUMS system is its script language, the idea of script languages for particular games is not new. In chess for example, there are a few languages have been developed to simplify the knowledge acquiring process and to help creating better AI. Script languages can also be found in commercial computer games, such as Age of Empire

Thus, when read in proper context, this statement by Chen & Wu clearly indicates that the use of scripting language in the context of the MUMS system (which was an embodiment of the invention) was not contemplated by others. Although scripting languages have been used in other contexts, there is absolutely no hint provided anywhere in the references that establish that a person of ordinary skill in the art would have been prompted to achieve the following: translating player definitions defining a plurality of players and an associated set of rules

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defining a possible decision space, a decision-making process tree, an information set, an outcome function, and a payoff function for each player, into at least one codified script that is executed, where a result of the outcome and payoff functions at the end of execution of a script stage determines the economic impact of the business policies defined by the rules.

In view of the foregoing, it is clear that the cited references establish that persons of ordinary skill in the art would have used predefined programs to perform simulations of business games, with nothing in the cited references to provide any hint that a person of ordinary skill in the art would have been led to translate player definitions as defined in claim 1 into at least one codified script that is executed. Therefore, even if the references could be hypothetically combined, the combined teachings would have resulted in the use of predefined programs to perform simulations of business games, which is completely different from the claimed subject matter.

As explained in the Background section of the present application, a "disadvantage" of conventional systems is "their limited adaptive flexibility." Specification, page 2, lines 20-21. "If a process or policy rule is changed, substantial programming may be required to effect the appropriate change in software code." *Id.*, page 2, lines 21-22. "Generally, the experimenter must choose the individual software package that most closely matches the business processes. Significant policy changes may otherwise require a change of experimental economic simulation software packages." *Id.*, page 2, line 24-page 3, line 4. In contrast, by using the ability of translating player definitions into at least one codified script, as performed by claim 1, enhanced flexibility is provided, which is clearly not hinted anywhere in the cited references.

Therefore, it is also clear that a person of ordinary skill in the art would not have been prompted to combine the teachings of the references to achieve the claimed invention. Independent claims 10 and 18 are similarly allowable over the cited references.

Dependent claims are allowable for at least the same reasons as corresponding independent claims. Moreover, note that dependent claim 4 further recites modifying the associated set of rules for one or more players, and repeating the translating and executing tasks after the modifying. The concept of modifying rules and then repeating the translating of the player definitions into a script according to the modified rules is clearly not a concept

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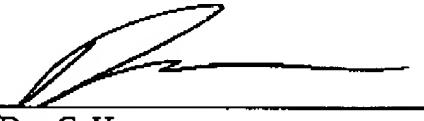
contemplated by the cited references, which teach using predefined programs to perform simulations.

Newly added dependent claims 22 and 23 are further allowable for similar reasons as claim 4.

Allowance of all claims is respectfully requested. The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 08-2025 (10004567-1).

Respectfully submitted,

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